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09/975,250	10/12/2001	Takuhito Ueno	110863	8843

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EXAMINER	
ROHWER, JACOB P	

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/975,250	UENO ET AL.	
	Examiner	Art Unit	
	Jacob P. Rohwer	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14 and 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1 and 9 – 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakazato et al. (US 6094546), in view of US Patent No 5,825,993 to Shimura et al.

Regarding claim 1, Nakazato teaches **a printing system** (Fig. 1) **comprising:**

a printing portion (Fig. 1, printer engine 30),

a controlling portion for controlling said printing portion (Fig. 1 printer controlling section 27),

a power saving mode (Fig. 6 shows printer states, including power saving state) **for stopping a supply of a power source to at least said controlling portion** (col. 9 lines 13-19 teach that all of the functions of printer controlling section 20 and printer engine 30 are disabled [which includes printer controlling section 27] except logic functions for receiving commands [ref. no. 22]),

a deciding portion (inherent to the printer due to its ability to shift into power-saving state during idle time; Fig. 6, col. 1 lines 6-7 and 62-62) **for deciding a shift from a normal mode to the power saving mode** (idle mode to power-saving state, Fig. 6);

a setting portion (Fig. 1 host computer 10) **for setting communication control information** (host computer 10 includes printer driver 11 that sets all communication control information that communicates control information to the printer) **used in the shift from the power saving mode to the normal mode after the shift to the power saving mode is decided by said deciding portion** (warm-up command information is set and communicated to printer, Fig. 2 S7 – by section 15 part of 11 part of 10, which is the setting portion); **and**

a receiving portion (Fig. 1 command analyzing section 22) **for receiving data based on the communication control information set by said setting portion** (receives command information communicated by the host computer 10) **without using said controlling portion** (command analyzing section does not use controlling portion 27 in the warm up command, the command is analyzed in 22 and then the warm up is transmitted to temperature controlling section 25 for starting the warm up) **in the shift from the power saving mode to the normal mode of the controlling portion** (warm-up command from host, so during the shift, if print data is received, it takes the step from S2 to S8);

wherein the communication control information indicates a type of response to be made to the received data (the commands indicate what the printer is supposed to do [how it should respond], and thus print data control information from the driver indicates a printing type response to be made to the received data, as well as a warm up type control information from the driver indicates the printer should warm up based on the received data – so the command analyzing section determines how to

respond based on the type of command) **received from the host computer** (the setting portion 10 including the printer driver 11 are what sends the commands and thus communication control information to the printer).

Nakazato does not specifically teach that the communication control information includes at least one of a storing amount of storing portion for storing the received data, a maximum data payload received from outside the printing system, and a reply rate of ACK response and NAK response to the outside of the printing system.

However, Shimura teaches a printing system wherein the host computer sends communication control information indicating a type of response from the printer regarding a storing amount of storing portion for storing received data (print data). **(Col 5 Lin 50 to Col 6 Lin 7)**

The Nakazato and Shimura Patents are combinable because they both come from the same field of endeavor relating to communicating printing control information.

It would have been obvious to one of ordinary skill in the art to use the communication control information indicating a response with regard to the memory capacity of the printer as specified in Shimura, in the system of Nakazato.

The motivation for doing so would have been to determine optimum communication processing and rasterization for the output of the print job according to the available memory capacity. **(Shimura, Col 5 Lin 50 to Col 6 Lin 7)**

Therefore it would have been obvious to combine the Nakazato and Shimura Patents in order to obtain the invention as specified in claim 1.

Regarding claims 9 and 12, all of the structural elements of claim 9 are included in claim 1. Therefore, the limitations are met by the combination of Nakazato and Shimura as discussed above.

Regarding claim 10, which depends from claim 9, Nakazato teaches **a storing portion for storing data received by the receiving portion** (memory 26 stores the data received in the shift, S8 of Fig. 3).

Regarding claim 11, which depends from claim 9, Nakazato teaches **a data received by the receiving portion from the external of the printing system is a data which the printing portion prints after the shift** (received printing data, S8, e.g. col. 4 lines 65-67).

2. **Claims 2 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakazato and Shimura as applied to claims 1 and 9 above, and further in view of Yoshida et al. (US 6636327) hereafter as Yoshida.

Regarding claims 2 and 14, which depend from claims 1 and 9, while the combination of Nakazato and Shimura teaches connecting the printer to an upper system (host 10) via a bidirectional interface 7 (Nakazato, Fig. 1) and a command analyzing section 22 that analyzes incoming commands to see how to process them from the upper system 10, the combination does not specifically teach that the bidirectional interface is a **serial bus** or that the command analyzing section **decides whether or not information is directed to own system, by referring an address area in a packet, and responds to only the information addressed to own system.**

However, Yoshida teaches connecting apparatuses in a printing system (Fig. 1) that are connected via a **serial bus** for the transmitting of data bi-directionally (between C and H for example). Yoshida further teaches that along the serial bus, packets are transferred that include address information so that the receiving device can check whether the packet is for it or not in order to respond to it or not (see Fig. 9, packet shown with destination ID).

It would have been obvious to use a serial bus for the bidirectional interface of the combination of Nakazato and Shimura that uses packets to send data. The motivation for doing so would have been to provide a high speed communication for possibly multiple devices where the devices know where and how to respond to the commands over the network (see col. 4 lines 42-50 and col. 2 lines 1-10 of Yoshida for explanation of the benefits of using the taught serial bus).

3. **Claims 3 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakazato and Shimura as applied to claims 1 and 9 above, and further in view of Yamanaka (US 6268925).

Regarding claims 3 and 15, which depend from claims 1 and 9, while the combination of Nakazato and Shimura teaches a bidirectional interface 7 (Nakazato, Fig. 1) that connects the printing device to the upper system (host device 10) and that **said deciding portion decides a mode shift by detecting change of an input control signal** (deciding portion must receive warm up [mode shift] command from the host system 10 via the interface 7 in order to initiate warm up of the printer engine 30),

the combination of Nakazato and Shimura does not specifically teach that the bidirectional interface 7 is a parallel bus.

Yamanaka teaches connecting a host machine (upper system) with a printer via a **parallel bus** (Fig. 2, bus 80).

It would have been obvious to one of ordinary skill in the art that the parallel interface could be used in the system of Nakazato and Shimura because it is a bidirectional interface for connecting a printer to a host. The motivation for connecting a parallel bus in the system would be for fast communication, which in general is faster than serial communication because multiple lines carry data instead of just one.

4. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakazato and Shimura in view of Gringeri et al. (US 6233226) hereafter as Gringeri.

Regarding claim 4, the combination of Nakazato and Shimura teaches **a printing system** (Nakazato, Fig. 1) **comprising:**

a printing portion (Nakazato, Fig. 1, printer engine 30),

a controlling portion for controlling said printing portion (Nakazato, Fig. 1 printer controlling section 27),

a power saving mode (Nakazato, Fig. 6 shows printer states, including power saving state) **for stopping a supply of a power source to at least said controlling portion** (Nakazato, col. 9 lines 13-19 teach that all of the functions of printer controlling section 20 and printer engine 30 are disabled [which includes printer controlling section 27] except logic functions for receiving commands [ref. no. 22]),

storing portion for storing received data (Fig. 1 memory 26 stores data for printing);

deciding a receiving speed (Nakazato Fig. 2, step S7-S10, wherein the planning of when and how to send the data is set in order to get the data to the printer at the time when it has warmed up, thus the receiving speed is at decided to be zero because the host system is generating the data during warm up and sends to printer when done generating) **based on a returning time from the power saving mode to a normal mode** (printer warm-up time calculating section determines a returning time to the idle [normal] state);

receiving portion for receiving data in a shift from the power saving mode to the normal mode to store the data in said storing portion (Nakazato, command analyzing section receives the image data from the system, wherein data is spooled from the host computer 10 to the printer during a warm up period [Fig. 2 S10] after the warm-up command has been sent [Fig. 2 S7]).

a communication control information that indicates a type of response to be made to the received data received from the computer host; and

the communication control information includes at least one of a storing amount of the storing portion for storing the received data, the maximum data payload received from the external of the printing system, and a reply rate of ACK response and NAK response to the outside of the printing system. (Shimura, Col 5 Lin 50 to Col 6 Lin 7, please see rejection of claim 1 above for motivation for combination of Nakazato and Shimura)

While the combination of Nakazato and Shimura teaches transmitting the data to the printer controlling section 20 via a bidirectional interface 7, the combination does not specifically teach deciding a receiving speed to send the data at based on the capacity of printer memory or the returning time.

Gringeri teaches a system for transferring data between devices connected in via bidirectional interfaces (Fig. 1) that includes determining transmission speed based on capacity of the receiver memory buffer (Fig. 5 S.32, col. 17 line 66 – col. 18 line 8, wherein data transmission rates between devices on a network are determined by the capacity of the receive buffer).

It would have been obvious to control the transmission of data in the system of the combination of Nakazato and Shimura with the transmission rate determination of Gringeri. The motivation for doing so would have been to prevent memory errors from receiving data too fast causing overflows at the receiving device (printer). Thus, the combination meets the limitation of **at least one of the receiving speed, a maximum data payload and a reply rate to the received data received from a computer host** because at least one is taught in the combination.

Regarding claim 5, which depends from claim 4, Gringeri further teaches **deciding portion decides dynamically the receiving speed in view of a residual capacity of said storing portion** (the transmission rate is determined dynamically for each frame [see S.40 of Fig. 5] based on the buffer free [residual] capacity).

5. **Claims 6-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination if Nakazato, Shimura and Gringeri as applied to claim 4 above, and further in view of Yoshida.

Regarding claim 6, which depends from claim 4, while the combination teaches connecting the printer to an upper system (Nakazato, host 10) via a bidirectional interface 7 (Fig. 1) and a command analyzing section 22 that analyzes incoming commands to see how to process them from the upper system 10, the combination does not specifically teach that the bidirectional interface is a **serial bus** or that the command analyzing section **decides the receiving speed based on setting of a data payload in a packet in receiving serial data from the upper system.**

Yoshida teaches connecting apparatuses in a printing system (Fig. 1) that are connected via a **serial bus** for the transmitting of data bi-directionally (between C and H for example). Yoshida further teaches that along the serial bus, packets are transferred that includes payload information in order for the system to determine how much data is being sent in the transmission (see Fig. 9, packet shown data length).

It would have been obvious to use a serial bus for the bidirectional interface of Nakazato that uses packets to send data including payload information. The motivation for doing so would have been to provide a high speed communication for possibly multiple devices where the devices know where and how to respond to the commands over the network (see col. 4 lines 42-50 and col. 2 lines 1-10 of Yoshida for explanation of the benefits of using the taught serial bus). Further, the motivation for using payload information is stated above, thus being that the system knows how much data is being

sent between systems and can accommodate the transfer based on transmission size information.

Regarding claim 7, which depends from claim 4, using the serial bus and packets of Yoshida as obvious above would also include **deciding portion decides the receiving speed based on a rate of notices** (the rate of signals that are sent back informing of unsuccessfully sent packets is necessarily a factor in determining receiving speed because if the sending device must resend many packets, the receiving speed of the job is altered to accommodated for the resending of packets) **informing that reception is normally completed** (Fig. 8 shows the acknowledge signal that is sent back when the packet has been transmission; col. 9 lines 11-15 further shown in Fig. 12), **and notices informing that the reception is not normally completed** (if there is a CRC error, the acknowledgement would include an unsuccessful sending; col. 9 lines 16-22), **in replying a receiving response to the upper system** (the acknowledge response is sent back to the sender, thus the host system of Nakazato).

6. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato, Shimura and Gringeri as applied to claim 4 above, and further in view of Yamanaka.

Regarding claim 8, which depends from claim 4, while the combination teaches a bidirectional interface 7 (Nakazato, Fig. 1) that connects the printing device to the upper system (host device 10) and that **said deciding portion decides a mode shift by detecting change of an input control signal** (deciding portion must receive warm up [mode shift] command from the host system 10 via the interface 7 in order to initiate

warm up of the printer engine 30), the combination does not specifically teach that the bidirectional interface 7 is a parallel bus.

Yamanaka teaches connecting a host machine (upper system) with a printer via a **parallel bus** (Fig. 2, bus 80).

It would have been obvious to one of ordinary skill in the art that the parallel interface could be used in the system of Nakazato, Shimura and Gringeri because it is a bidirectional interface for connecting a printer to a host. The motivation for connecting a parallel bus in the system would be for fast communication, which in general is faster than serial communication because multiple lines carry data instead of just one.

Response to Arguments

Applicant's arguments with respect to claims 1-12 and 14-15 have been considered but are moot in view of the new ground(s) of rejection. The Shimura reference has been found, in combination with Nakazato to teach the new limitation of the claims as amended.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob P. Rohwer whose telephone number is 571-272-5509. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on 571-272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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7/21/06

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